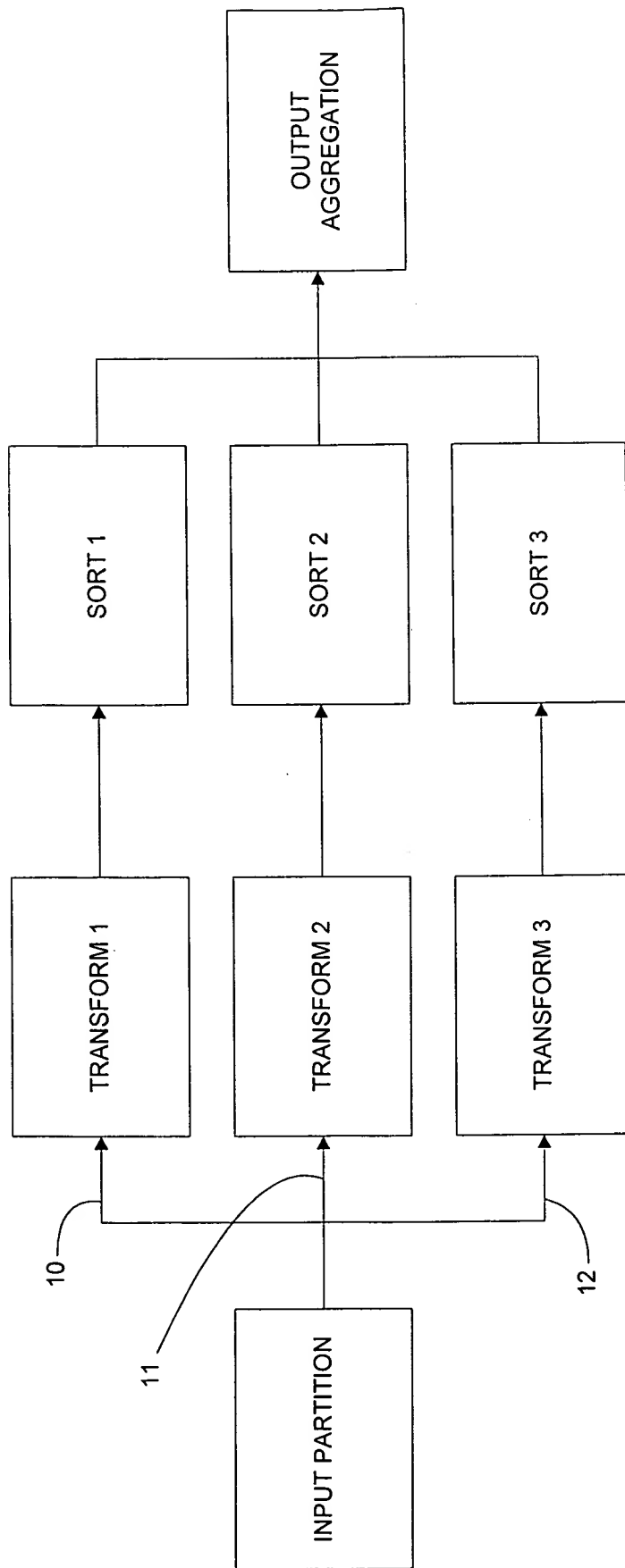


FIG. 1 (Prior Art)



7

FIG. 2

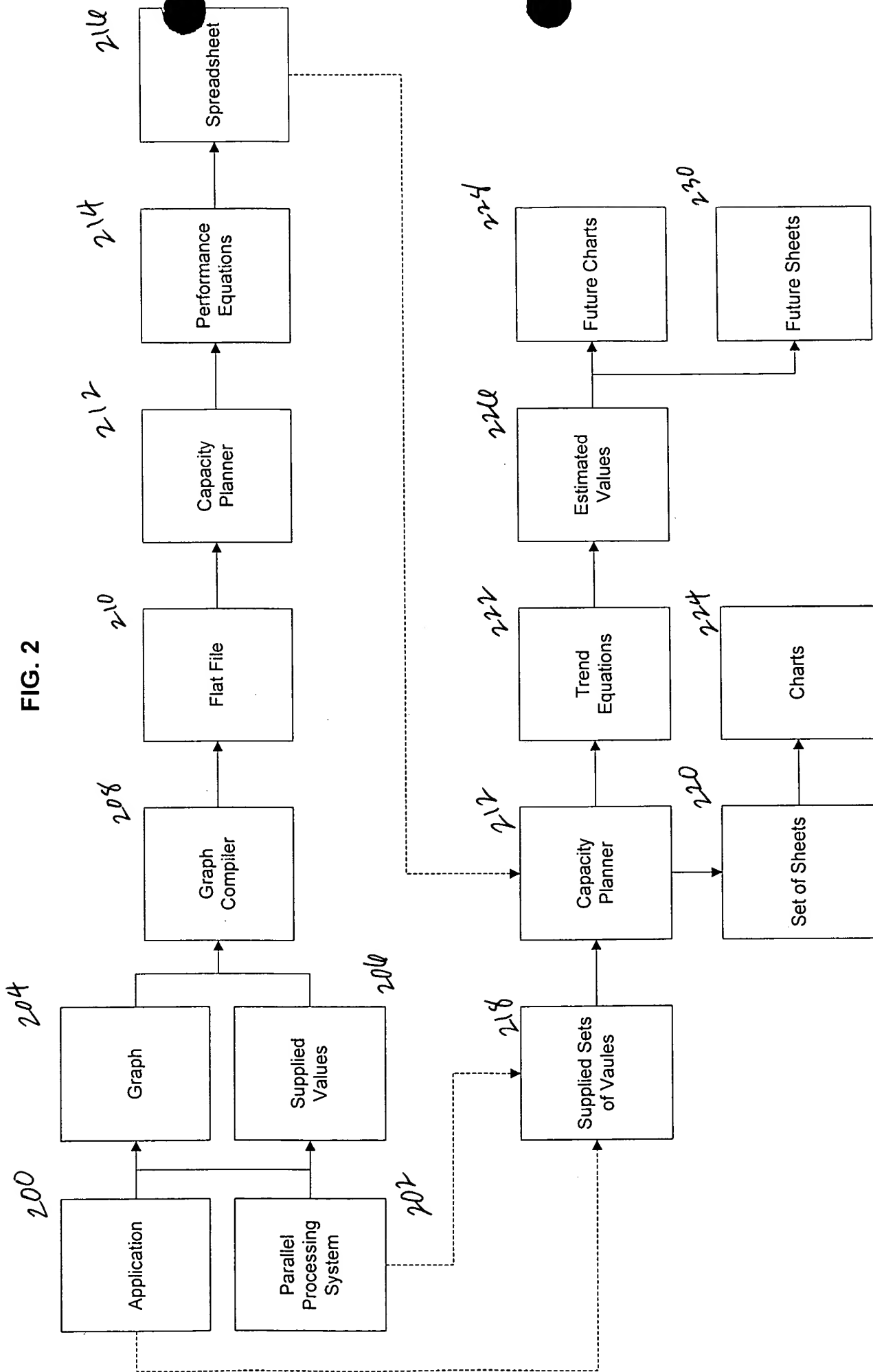


FIG. 3

```

TH
TI,SpreadsheetPath=c:\My Documents\marshall\capdemo\scoring.xls
TI,Time=hour
TI,SheetTitle=Scoring

CH
CT,Disk I/O, 3.0
CT,Hash, 10
CT,Send,2
CT,Sort,0.5
CT,Merge and transform,2
CT,Aggregate, 2
CT,Score,2

GH
GT,Sort detail data, 68,94,Sort=1,Disk I/O=1,CPUTIME=12500
GT,Sort customer data, .3,82,Sort=1,Disk I/O=1,CPUTIME=300
GT,Merge and transform, 68, 169, Merge and transform=1, CPUTIME=5700
GT,Aggregate,68,169,Aggregate=1, CPUTIME=6300
GT,Score,.3,94,Disk I/O=1, Score=1,CPUTIME=20
FH

```

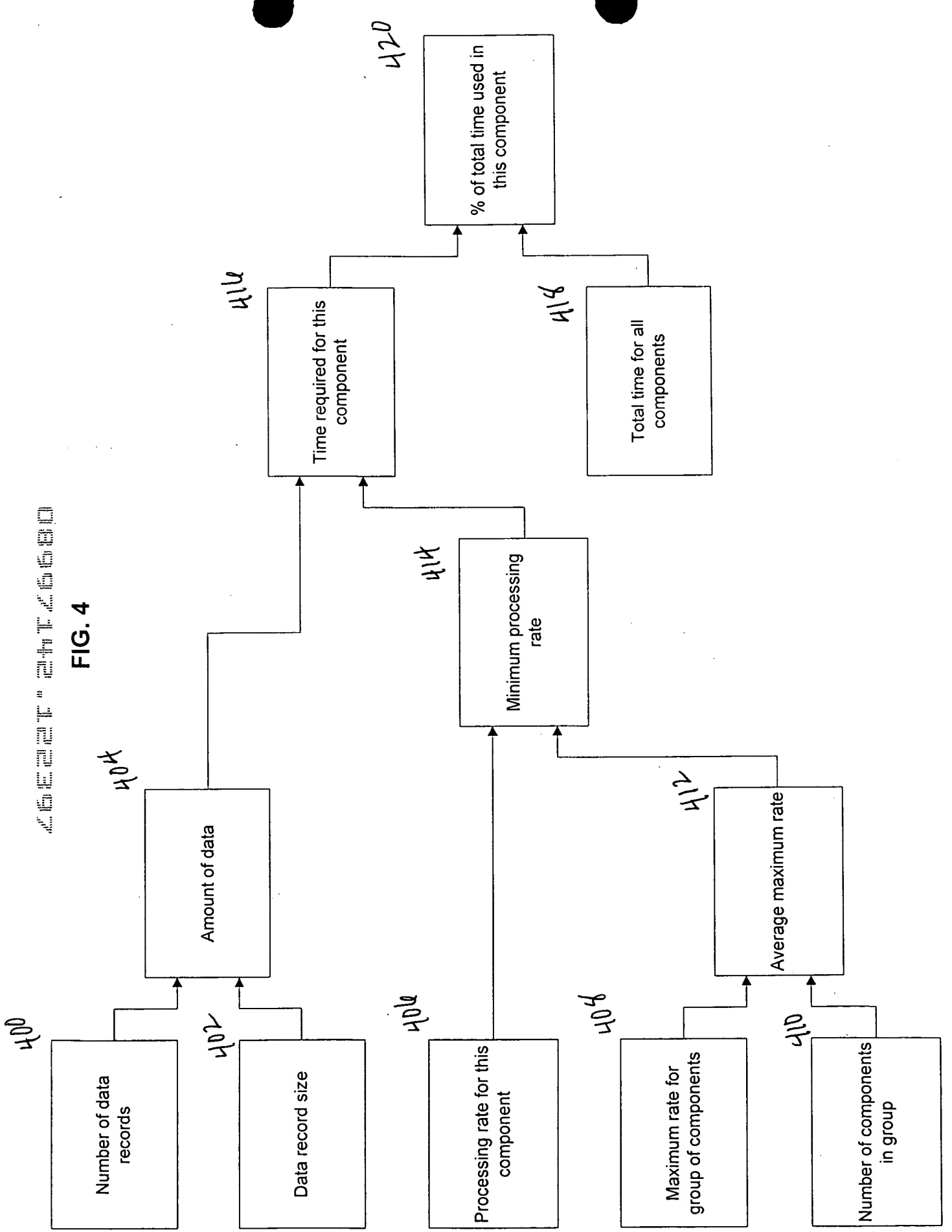


FIG. 4

# Scoring

|                     | 502                | 504   | 506                  | 508                 | 510             | 512           | 514          | 516             | 518                | 520                   |
|---------------------|--------------------|-------|----------------------|---------------------|-----------------|---------------|--------------|-----------------|--------------------|-----------------------|
| Performance Model   | Comp Rate (MB/sec) | Parts | # Records (Millions) | Record Size (bytes) | Total Size (GB) | Disk I/O (GB) | Net I/O (GB) | Total Data (GB) | Total Time (hours) | Percent of Total Time |
| Sort detail data    | 0.5                | 2     | 68.0                 | 94.0                | 6.4             | 6.4           |              | 6.4             | 3.6                | 14.9%                 |
| Sort customer data  | 0.5                | 2     | 0.3                  | 82.0                | 0.0             | 0.0           |              | 0.0             | 0.0                | 0.1%                  |
| Merge and transform | 0.3                | 2     | 68.0                 | 169.0               | 11.5            |               |              | 11.5            | 10.6               | 44.7%                 |
| Aggregate           | 0.4                | 1     | 68.0                 | 169.0               | 11.5            |               |              | 11.5            | 9.1                | 38.3%                 |
| Score               | 0.8                | 1     | 0.3                  | 94.0                | 0.0             | 0.0           |              | 0.0             | 0.0                | 0.0%                  |
| Disk I/O            | 4.0                |       |                      |                     |                 | 6.4           |              |                 | 0.4                | 1.9%                  |
| Network I/O         | 5.0                |       |                      |                     |                 |               | 0.0          |                 | 0.0                | 0.0%                  |

Total CPU hours 23.8

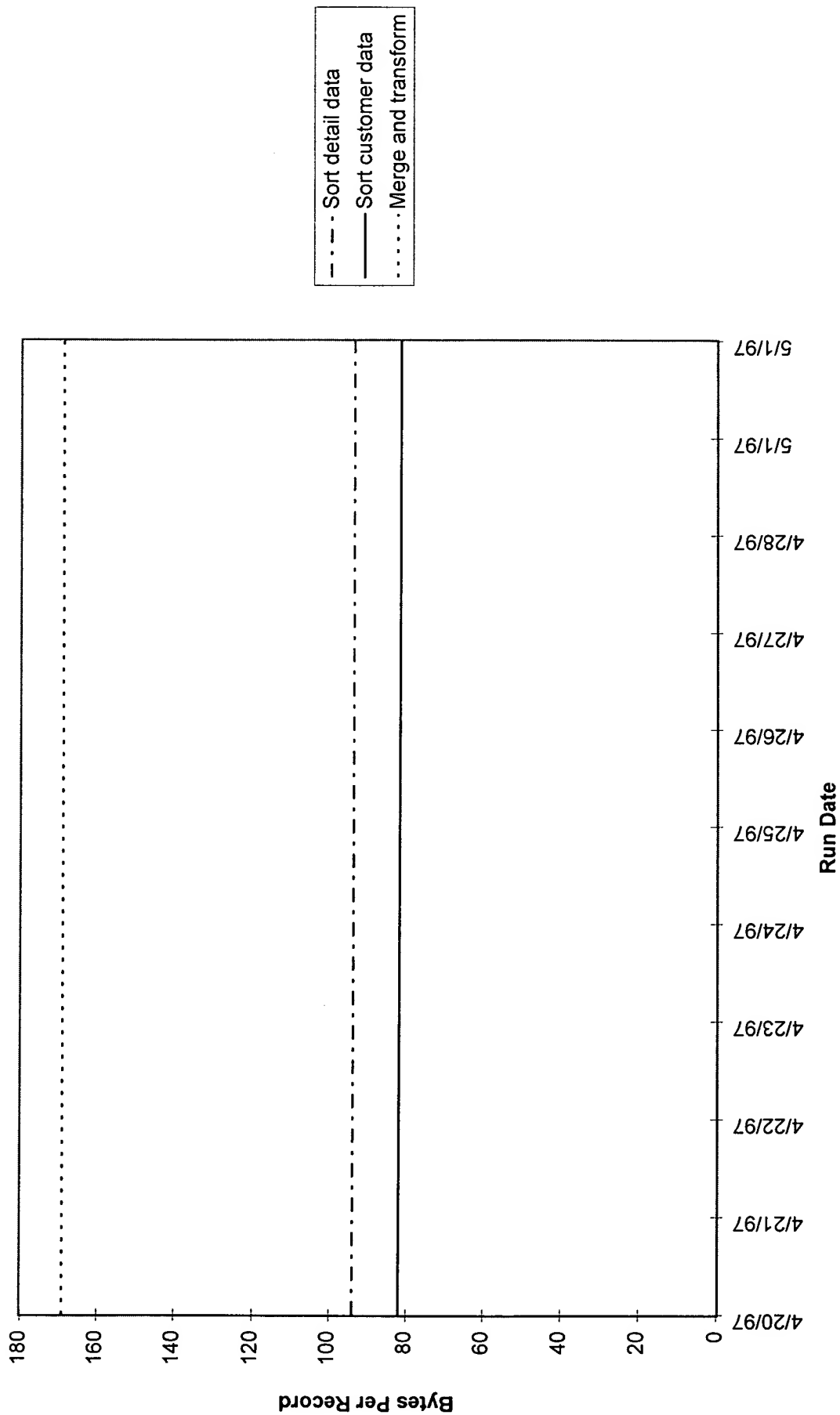
522

| 524              | ELAPSED TIME        |                    |         |                      | 530   | 532  | 534 | 536  | 538 | 540 | 542 | 544   |
|------------------|---------------------|--------------------|---------|----------------------|-------|------|-----|------|-----|-----|-----|-------|
|                  | Performance Model   | Comp Rate (MB/sec) | # Parts | # Records (Millions) |       |      |     |      |     |     |     |       |
| Sort detail data | Sort customer data  | 0.5                | 2       | 68.0                 | 94.0  | 6.4  | 3.2 | 3.2  |     |     | 1.8 | 10.8% |
|                  | Merge and transform | 0.5                | 2       | 0.3                  | 82.0  | 0.0  | 0.0 | 0.0  |     |     | 0.0 | 0.0%  |
|                  | Aggregate           | 0.3                | 2       | 68.0                 | 169.0 | 11.5 |     | 5.7  | 5.3 |     |     | 32.3% |
|                  | Score               | 0.4                | 1       | 68.0                 | 169.0 | 11.5 |     | 11.5 | 9.1 |     |     | 55.4% |
| Disk I/O         |                     | 0.8                | 1       | 0.3                  | 94.0  | 0.0  | 0.0 | 0.0  |     |     | 0.0 | 0.1%  |
|                  |                     | 4.0                |         |                      |       |      | 3.2 |      |     |     | 0.2 | 1.4%  |
| Network I/O      |                     | 5.0                |         |                      |       |      |     |      | 0.0 |     | 0.0 | 0.0%  |

546 Estimated elapsed hours 16.5  
 548 Wall clock time (hours) 16.9  
 550 % CPU busy 97.4%

Fig. 5

FIG. 6



Report 2474680

FIG. 7

